

### Phase III Data Recovery

Phase III investigations of 7NC-E-152 were limited to the boundaries of the project's revised final preferred alternative roadway improvement design, and comprised only those portions of the site located between the base of the existing road berm, in the east, and the temporary construction easement (TCE), in the west (see Figure 2). These boundaries encompass approximately 550 m<sup>2</sup> of the overall delineated site area and include all or portions of artifact clusters 1, 3 and 4 (portions of Cluster 1 and all of Cluster 2 fall outside of the preferred alternative, will not be further impacted by construction activities, and consequently have not been included in Phase III investigations).

As stipulated by both DelDOT and DE SHPO, data recovery excavations were completed in two distinct stages. The first stage of these investigations was completed in the Spring of 2004 and involved the excavation of 10% of the areas occupied by each of these three clusters, or 22 total one-by-one meter square excavation units. Of these units, were placed within Cluster 1, six in Cluster 3, and 12 in Cluster 4. Another 2 units were situated between Clusters 1 and 3 (N25 E24) and 3 and 4 (N58 E22), respectively, and sought to provide additional information regarding the distribution of artifacts outside of well-defined artifact concentrations (Figure 2).

Completion of initial Phase III Stage 1 units resulted in the recovery of 1,628 total artifacts and the identification of a single possible subsurface feature. The overwhelming majority of collected artifacts (77.9%) consisted of quartz dominated manufacturing debitage, along with lesser amounts of bifacially worked tools (N=41; 2.5%), simple cobble tools (hammer/anvil stones [N=57; 3.5%]), and fire-cracked rock (N=255; 15.7%). While Phase II testing produced no evidence of prehistoric pottery in any unit, a total of 7 sherds of pottery (0.4%) were recovered from within Cluster 1, and serve to refine the dating of that occupation to the broader Woodland culture period. The bulk of cultural materials across the site were found to originate within plow zone soils (Ap2) (ca. 80%), and in particular from the bottom 10-15cm of that stratum. The remaining 20% of artifacts from the site were retrieved from intact B-horizon contexts. Individual units were found to exhibit a wide range of artifact densities (max. range = 16-149), with an overall average of 74 artifacts/unit for all Phase III EUs.

Stage 2 of Data Recovery investigations involved the completion of a further 79 excavation units and expanded the combined Phase III sample to 18.4% of the total preferred alternative study area. These additional units were used to recover a larger sample of associated cultural deposits within each cluster, to help refine site chronology, to more thoroughly delineate preserved intrasite artifact patterning, and to search for additional evidence of preserved sub-surface features. Phase III Stage 2 work was completed between November 2004 and January 2005, and were distributed across the site in the following manner: Cluster 1 – 8 units; Cluster 3 – 10 units; Cluster 4 – 58 units; and Cluster 5 – 3 units (see Figure 2). The conclusion of Stage 2 work resulted in the recovery of an additional 6,057 total artifacts (Figure 3). Included among the cultural material were 4,671 pieces of debitage, 136 bifacial tools, 116 cobble tools, 1,123 fire-cracked rock fragments, and 11 Native American pottery sherds. Additional details of artifacts recovered from individual clusters, and more specific discussions of artifact patterns observed within each, are presented below.

In completing these additional units all provisions, methodologies, and agreements outlined in both the project Memorandum of Agreement and Phase III Research Design were rigidly adhered to. All units were excavated in arbitrary 10 cm levels within natural strata and removed in 50-by-50cm square quads within each level. Excavated soils were screened through ¼-inch hardware cloth and artifact content was quantified and tabulated separately for each 50cm quad. This data was used to track artifact distribution within individual clusters, to delineate any horizontal artifact patterning that may be evident, and to assist in the precise placement of successive excavation units.

## Cluster Summaries

The following section outlines preliminary findings for the four individual defined clusters contained within the preferred design alternative, and incorporates Phase II and Phase III Stage 1 and 2 data. It must be noted once more that Phase III Stage 2 findings presented below are based entirely on field artifact counts and other observations that remain, at this time, unsupported by controlled examinations or more intensive analyses. Consequently, any interpretations offered here must be considered to be preliminary in nature, and subject to subsequent revision or modification.

**Cluster 1** is located in the extreme southern portion of the Phase III study area, received a total of 12 Phase II/III excavation units, and produced a total of 589 artifacts. Cultural materials comprising this cluster appear to be concentrated along the steep slope bordering the adjacent unnamed tributary stream, and vary between 28-65 artifacts/m<sup>2</sup>. As shown in Table 2, artifacts recovered from this area are dominated by lithic manufacturing debitage (primarily quartz, along with lesser amounts of chert, jasper, quartzite, and argillite – a pattern maintained in all clusters), but also include some 17 point and biface fragments, simple cobble tools, and relatively low densities of fire-cracked rock. Internal artifact distributions tend to be relatively indistinct, with the exception of a single manufacturing concentration (bifaces and cobble tools; Figure 4). No subsurface evidence of intact hearth or other features was identified within this cluster.

Table 2. Cluster 1 preliminary prehistoric artifact summary.

Artifact Categories						
Unit No.	Bifaces	Debitage	Cobble Tools	FCR	Pottery	Totals
9	1	34	1	2		38 6.45%
18	1	32	2			35 5.94%
35	1	24	2	18	3	48 8.15%
37	2	45	7	4		58 9.85%
67	2	56		4		62 10.53%
68		37	1	10		48 8.15%
69	6	53		6		65 11.04%
72	2	40	1	6		49 8.32%
74		37		8		45 7.64%
76	1	40	3	7		51 8.66%
78		25		2	1	28 4.75%
93	1	56	3	1	1	62 10.53%
<b>Totals</b>	17 2.89%	479 81.32%	20 3.40%	68 11.54%	5 0.85%	589 100.00%

Note: Black – Phase II artifacts; Green – Phase III Stage 1 artifacts; Blue –Phase III Stage 2 artifacts.

Potentially diagnostic artifacts from Cluster 1 include portions of four projectile points and five prehistoric pottery sherds (Plate 1). Recovered points include jasper notched/expanding stem, argillite lanceolate, straight-stemmed, and chert triangular variants – and serve to tentatively date this component to the Early-Middle Woodland culture periods (Woodland I in Delaware chronology). The straight-stemmed point is manufactured from possible Flint Ridge chalcedony and is represented by three separate fragments that re-fit to one another. Rather curious breakage morphology associated with this artifact may be indicative of its having been ritually “killed” prior to final discard. Pottery from this cluster is

generally thin and well made, exhibits mica flecking in the body paste and, with the exception of a single incised sherd, is undecorated. Inspection of these fragments by representatives of the DE SHPO, Delaware State Museum, and other knowledgeable colleagues during the recent field meeting have resulted in their preliminary identification as possible Hell Island (Woodland I) or Minguannan ceramic wares (Woodland II).

**Cluster 3**, located to the north of Cluster 1 and near the center of the site, was sampled through the excavation of 19 EUs and resulted in the recovery of a combined total of 1,015 artifacts (Table 3). Collected cultural materials include significant lithic debitage, quantities of failed early and mid-stage bifaces (N=20), small numbers of simple flake tools, associated hammer and anvil stones, and moderate amounts of fire-cracked rock. No prehistoric pottery was identified from any portion of this cluster. Although previous stages of excavation had failed to produce potentially diagnostic artifacts, Phase III Stage 2 field efforts did result in the recovery of a single bifurcated projectile point (possible Lecroy; Plate 2). This artifact serves to tentatively date Cluster 3 to the Early-Middle Archaic culture periods (ca. 8000 B.C. – 3000 B.C.).

Table 3. Cluster 3 preliminary prehistoric artifact summary.

Artifact Categories						
Unit No.	Bifaces	Debitage	Cobble Tools	FCR	Pottery	Totals
3		40	1	5		46 4.53%
14		42				42 4.14%
22	1	44	4	1		50 4.93%
34	2	46	2	1		51 5.02%
36		54	3	12		69 6.80%
39	3	35		6		44 4.33%
41		57	8	9		74 7.29%
44	1	67	3	9		80 7.88%
45		32	2	5		39 3.84%
64	1	60		10		71 7.00%
65	8	91	2	15		116 11.43%
66	2	44	4	2		52 5.12%
71	1	45		6		52 5.12%
79		29	1	7		37 3.65%
80		52	5	2		59 5.81%
83	1	18		6		25 2.46%
84		23		5		28 2.76%
87	1	32	1	12		46 4.53%
88		30		4		34 3.35%
<b>Totals</b>	21 2.07%	841 82.86%	36 3.55%	117 11.53%	0 0.00%	1015 100.00%

Note: Black – Phase II artifacts; Green – Phase III Stage 1 artifacts; Blue –Phase III Stage 2 artifacts.

Artifact distributions within the cluster seem to be relatively uncomplicated, yet retain more detail than was evident in Cluster 1, and are thought to be associated with a single, short-term occupation event (Figure 5). The highest artifact densities (116 artifact/m<sup>2</sup>) were found in the southwest section of the

excavations, in and around EU 65 (see Figure 2), where large amounts of debitage, biface fragments, cobble tools, and FCR appear to indicate the presence of a concentrated manufacturing area. Debitage patterns further suggest secondary manufacturing loci in the vicinity of EUs 44/36 and 41 as well, although in these instances the direct association of biface rejects/knapping tools is somewhat less distinct. While subsurface (B-horizon) rock deposits were especially dense within the limits of Cluster 3, this lithic material appeared to be a naturally occurring component of the soil matrix and was not associated with any identified intact cultural features. Based on the overall distribution of artifacts, it appears that some high-density portions of this component extend outside (west of) the limits of the Phase III study area and will remain preserved in un-impacted sections of the site.

**Cluster 4** is located at the extreme northern end of the study area and is the most artifactually dense, internally complex, and archaeologically intriguing component of the site. Represented by a combined total of 4,724 artifacts (Table 4), this locus is dominated by quantities of manufacturing debitage, and includes large numbers of bifacial tools (N=107; 23 potentially diagnostic points/point fragments), manufacturing related cobble tools (N=75), and fire-cracked rock. Also contained within this assemblage are significant numbers of unifacial flake tools, including at least five endscrapers (two manufactured from crystal quartz), a number of possible “spokeshaves”, and several pieces with possible intentionally produced graver spurs.

Based on recovered points Cluster 4 was initially interpreted to possibly date to the Early/Middle Archaic through Early Woodland culture periods (ca. 8,000-0 A.D.), and the recovery of additional diagnostic artifacts has not as yet altered or refined that assessment. The 23 points collected from this locus include a variety of distinctive morphologies including side/corner notched (N=6; Plate 3), contracting/straight stem (N=13; Plate 4), and triangular (N=4; Plate 5). A cursory review of data for Piedmont and Coastal zones of the Middle Atlantic region reveals that points exhibiting the above suite of gross morphological characteristics commonly co-occur on sites spanning a broad period of prehistory. Given the absence of materials that can be subjected to C-14 or other absolute dating methods, more discriminating analyses of these artifacts will be required in order to determine the accurate chronological placement of this occupation.

Though not constituting hard and fast temporal markers, several artifact types or characteristics of artifacts recovered from Cluster 4 may suggest an overall earlier date for this locus, or may indicate that the recovered artifact assemblage is the product of multiple discreet occupations, including some that may be quite old. In particular, the presence of end scrapers (Plate 6) and tools exhibiting potential graver spurs represent features more commonly encountered on earlier sites, in particular those dating to the Middle Archaic period or before. Also curious is the presence of the triangular jasper tool shown at the far left in Plate 5. In terms of both its overall shape and basal flaking attributes, this piece initially seems to resemble an artifact type referred to by Gramly as a fluted drill or perforator (Gramly 2000; Figure 31), and that is associated with Paleo Indian culture period.

In terms of gross artifact distribution, the majority of Cluster 4 associated cultural materials appear to fall within the limits of the completed Phase II/III excavations. Consequently, the recovered sample for this site component is believed to approach 100%. Units completed around the periphery of Cluster 4, including five placed just west of the maximum limit of construction impact (see Figure 2), show artifact counts to generally decline in all directions out from the core excavation area.

In stark contrast to other portions of Site 7NC-E-152, artifact distributions within the defined limits of Cluster 4 show strong evidence of pronounced horizontal patterning. As shown in Figure 6, overall artifact distributions are clustered within three primary activity areas, with secondary artifact concentrations oriented in adjacent areas. This gross pattern is also echoed in the distribution of bifaces,

Table 4. Cluster 4 preliminary prehistoric artifact summary.

Unit No.	Artifact Categories					Totals	
	Bifaces	Debitage	Cobble Tools	FCR	Pottery		
8	1	33	1			35	0.74%
11	1	38				39	0.83%
12	3	40	2	4		49	1.04%
16	2	35	7	1		45	0.95%
17	1	30				31	0.66%
26	3	68		29		100	2.12%
27	1	62		7		70	1.48%
28	--	36		9		45	0.95%
29	2	124		16		142	3.01%
30	3	37	5	14		59	1.25%
31	3	74		18		95	2.01%
32	3	46	8	19		76	1.61%
33	2	31	2	9		44	0.93%
40	1	122	4	22		149	3.15%
42	2	121		20		143	3.03%
43	8	63	2	7		80	1.69%
46	--	78	6	20		104	2.20%
48	2	44		6		52	1.10%
49	2	66	1	13		82	1.74%
50	1	48	1	15		65	1.38%
51		60	1	16		77	1.63%
52	1	73		23		97	2.05%
53	3	45	1	2		51	1.08%
54	1	62	2	21		86	1.82%
55	1	107	1	10		119	2.52%
56	1	33	2	9		45	0.95%
57	3	69	2	10		84	1.78%
58	6	85		2		93	1.97%
59	3	37	2			42	0.89%
60	2	42		7		51	1.08%
61	3	31	2	7		43	0.91%
62		39		16		55	1.16%
63		30	5	6		41	0.87%
70	1	55	1	21		78	1.65%
81		66		6		72	1.52%
82	1	30		19		50	1.06%
85	1	60	3	23		87	1.84%
86	1	65	2	12		80	1.69%
89		30		2		32	0.68%
90	2	60		21		83	1.76%
91	1	62	1	45		109	2.31%
92	1	26		2		29	0.61%

Table 4. Cluster 4 preliminary prehistoric artifact summary (cont'd).

Artifact Categories							
Unit No.	Bifaces	Debitage	Cobble Tools	FCR	Pottery	Totals	
94		39		10		49	1.04%
95		50		24		74	1.57%
96	2	39		20		61	1.29%
97	6	75		10		91	1.93%
98	2	27	1	17		47	0.99%
99	2	42		5		49	1.04%
100	1	60		53		114	2.41%
101	2	62		28		92	1.95%
102		24	3	7		34	0.72%
103		45		30		75	1.59%
104	2	37		7		46	0.97%
105	2	61	1	36		100	2.12%
106	3	58		3		64	1.35%
107	1	56	1	32		90	1.91%
108	1	23		7		31	0.66%
109		24		15		39	0.83%
110		27		6		33	0.70%
111		34		4		38	0.80%
112		30		17	1	48	1.02%
113	2	23		6		31	0.66%
114		29	1	11		41	0.87%
115		10		1		11	0.23%
116	1	34	1	3		39	0.83%
117	2	15		3		20	0.42%
118		19		6		25	0.53%
119		27		8		35	0.74%
120	3	15	2	18		38	0.80%
121		44		2		46	0.97%
122		56		3		59	1.25%
123		45	1	11		57	1.21%
124		34		1		35	0.74%
125	1	66		7		74	1.57%
126	1	18		10		29	0.61%
<b>Totals</b>	107	3611	75	930	1	4724	100.00%
	2.27%	76.44%	1.59%	19.69%	0.02%		

Note: Black – Phase II artifacts; Green – Phase III Stage 1 artifacts; Blue –Phase III Stage 2 artifacts.

cobble tool, and fire-cracked rock. Significantly, these same patterns are also repeated in the distribution of artifacts recovered from B-horizon soils. This duplication in patterning between impacted and undisturbed stratigraphic contexts supports the interpretation that artifact distributions observed within Cluster 4 are likely to some degree a reflection of actual behaviors and activities performed within this locus, and not just an essentially random grouping of items created by years of plowing. Figure 7 shows

that similar internal horizontal patterning is preserved with respect to the distribution of the four dominant lithic raw material categories.

While excavations in Cluster 4 have thus far not identified any partially intact hearth features below the plow zone, a possible single feature of uncertain function may have been encountered in EU 30, near the southern end of the excavations. Shown in Plate 7, this possible feature consists of a semi-circular arrangement of large cobbles encountered in the first 10 cm of intact B-horizon soils. While pockets of large unmodified and apparently non-cultural rocks have been encountered in other portions of the site, the soils in this northern portion of the site tend to be more uniformly silty in nature and naturally occurring rock pockets have not been identified previously in this location. Moreover, five of the rocks forming this concentration were determined to bear possible evidence of their use as hammer or anvil stones.

**Cluster 5** is located between Clusters 1 and 3 and sits immediately adjacent to the existing Churchman's Road berm. This location had been previously examined during earlier Phase II investigations by a series of close interval STPs and produced a number of consecutive tests containing slightly elevated quantities of prehistoric artifacts. Phase III testing of this locus involved the completion of 4 EUs and resulted in the recovery of 139 total artifacts (Table 5). Collected artifacts include a single chert triangle, manufacturing debitage, small amounts of cobble tools and FCR, as well as five sherds of Native American pottery. Though bearing no signs of intentional exterior or interior decoration, the recovered pottery exhibits mica flecking in the body paste like those fragments found Cluster 1, and may be of comparable age and cultural association. Artifact distributions in this portion of the site indicated relatively low densities of cultural materials and exhibited no easily discernable horizontal patterning associated indicative of spatially discreet activity areas.

Phase II Shovel tests and Phase III unit excavations in the vicinity of Cluster 5 revealed portions of the original landform to be buried beneath approximately 45 cm of fill material derived from or associated with the adjacent road berm. The fill deposits consisted of multiple individual horizons and contained exclusively modern debris (plastic food wrappers). Documented unit profiles indicate that the construction of Churchman's Road may have impacted intact soils in this portion of the site in that plow zone deposits appeared much thinner here than in other site areas. At this time it is unclear whether this observation indicates that upper soils were partially truncated during roadway construction or were rather compacted by the actions of construction equipment. All prehistoric artifacts in this location were contained only in the underlying plow zone and B-horizon soils.

Table 5. Cluster 5 preliminary prehistoric artifact summary.

Artifact Categories						
Unit No.	Bifaces	Debitage	Cobble Tools	FCR	Pottery	Totals
38	1	34	3	1	3	42 30.22%
73		19		7		26 18.71%
75	1	34		11		46 33.09%
77		21		2	2	25 17.99%
<b>Totals</b>	2	108	3	21	5	139 100.00%
	1.44%	77.70%	2.16%	15.11%	3.60%	

Note: Black – Phase II artifacts; Green – Phase III Stage 1 artifacts; Blue –Phase III Stage 2 artifacts.